13. SOME INTERESTING METHODS OF FISHING *SPARUS* SPP. 'KHURANTI', IN CHILKA LAKE[1]

Fishing methods of Chilka Lake have been dealt with by Devasundaram (1951, 1954), Jones & Sujansingani (1951, 1952a & b, 1954), Mohapatra (1955a-c), and Mitra & Mohapatra (1957). While engaged in certain fishery investigations in Chilka Lake during the years 1956-1961, the authors observed certain hitherto unrecorded methods of fishing Dhala Khuranti, *Sparus sarba*, and Kala Khuranti, *S. datnia*. These methods, observed in the rather remote and not easily accessible lake mouth region of Chilka Lake, are described in the present note.

1. *Use of blood-dripping chunks of shark flesh.* In this method of capturing *Sparus*, empirically known to local fishermen for generations, advantage is taken of the apparent attraction of this fish to shark flesh and blood. Sharks, generally *Carcharinus* sp., are commonly caught by spearing at the lake mouth region. A freshly captured shark is cut open for the removal of its liver in a boat so that the blood collects in a pool in the bottom of the boat. The carcass is cut into large chunks of flesh and dipped in the pool of blood. These blood-dripping pieces of shark flesh are held by hand or rope submerged in the water at a depth of about 2 ft. at selected spots near the shore and are gently carried or towed to and fro for short distances without creating much disturbance in the water. A few small pieces of shark flesh are also dropped in the water near the man towing the chunk. The oozing blood, for some reason which is not yet fully understood, soon attracts groups of *S. datnia* and *S. sarba*. The *Sparus* is not seen to eat the flesh but, in general, trails behind the 'receding bait'. It is possible that some fish at least nibble at the shark flesh. The man holding the bait, on observing sufficient accumulation of *Sparus* trailing behind it, signals to others waiting near by, who encircle the fish with Khari Jals (a type of hand seine extensively used in Chilka) and haul them up. A number of pieces of shark flesh are used by different sets, each of 6-8 fishermen, or the operation is repeated by the same set in this fashion at different spots.

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and 50-60 kg. of *Sparus* are often caught in 2-3 hours by a party. A single operation generally takes about an hour and as many as three operations are made using the same piece of flesh. This method is used during the period November to January, when the Chilka *Sparus* migrates from the lake to the sea for breeding and are generally available in fairly large numbers in the lake mouth region. The flesh of sea turtles is occasionally used as a substitute for shark flesh for this purpose.

2. *Use of black silicaceous earth.* Mounds of black earth (about 3-4·5 m. in diameter and 60-120 cm. high), scattered in the inter-tidal zone of the lake mouth region, are a characteristic feature in certain seasons. At times a tall bamboo pole marks the location of the mound. These mounds are put up by the local fishermen in the inter-tidal zone to attract *Sparus* spp. which, apparently have a liking for the substance the mounds are made of. Groups of *Sparus* gather round the black heaps at high tide and, sensing the congregation from underwater ruffle or perhaps intuitionally (the operations being only nocturnal), the fishermen encircle the mound with Khari Jals and make an easy haul of the catch. Like the method described above, this method is practised during November-January when there is a concentration of *Sparus* spp. in the lake mouth region. About 25-35 kg. of the fish is often caught in one night by this method. The black earth on close inspection shows a conglomeration of dehydrated vegetable matter embedded in black silicaceous earth and it is believed that *Sparus* is attracted by the vegetable matter.

Of special interest is the practice of nocturnal angling by many people for *Sparus* spp. in the lake mouth region during November-January. The shore profile of the region is marked by deposits of black earth, of the type described above, standing in sharp contrast to the adjacent sandy areas. The anglers congregate in the black earth portions of the shore, since a continuation of the black deposit in the contiguous underwater region attracts *Sparus*, especially at nights, enhancing the chances of the fish taking bait, comprising pieces of prawns or algal weeds. The anglers invariably do the fishing very successfully in such situations.

The gut contents of *Sparus sarba* are found to be 31% algae, 20% molluscs, 17% crustacea, 12% decayed organic matter, 11% weeds like *Aalophyla, Potamogeton*, etc., and 9% miscellaneous matter (Jhingran *et al.* 1963). The fish may, therefore, be regarded as omnivorous. As neither blood nor shark flesh nor earth have been

identified in the stomach contents it is possible that the attraction to these baits is due to a chemotactic stimulus.

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14. A NOTE ON THE IDENTITY OF *ONYCHIURUS GRANULOSUS* STACH AND *O. PSEUDOGRANULOSUS* GISIN (COLLEMBOLA : ONYCHIURIDAE)

(With three text-figures)

The controversy relating to *O. granulosus* Stach and *O. pseudo-granulosus* Gisin has been left unsettled since Stach (1954) considered the latter species to be identical with the former on the assumption that Gisin's failure to observe the ventral organ in the male specimens of *O. pseudogranulosus* was due to the forms examined being immature—other phenotypic differences between them were considered by Stach to be insignificant. In the light of this disagreement between two pioneer Collembolan taxonomists the present author felt it imperative to undertake this investigation to resolve the controversy.

The descriptions below are an addition to the original findings and are based on some new chaetotactic criteria of the syntypic materials

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